

**Table S1.** List of plasmids generated for this study.

Plasmid	Purpose	Selectable Marker
pDClink	transfection plasmid with WR99210 resistance marker	human <i>dhfr</i>
pDC-attB-var3(HA)	place <i>ef-1α</i> promoter and <i>attB</i> site upstream of HA-tagged <i>IT4var3</i> gene (via homologous recombination)	human <i>dhfr</i>
pDC-var3(attB-HA)	place <i>ef-1α</i> promoter upstream of <i>attB</i> and HA-tagged <i>IT4var3</i> gene (via homologous recombination)	human <i>dhfr</i>
p-attP-NTS-V5	cloning intermediate	none
p-attP-NTS-V5-TM-ATS	express mini- <i>var</i> NTS-V5-TM-ATS by <i>ef-1a</i> promoter	none
p-attP-NTS-V5-GFP-TM-ATS	express mini- <i>var</i> NTS-V5-GFP-TM-ATS by <i>ef-1a</i> promoter	none
p-attP-NTS-V5-GFP	express mini- <i>var</i> NTS-V5-GFP by <i>ef-1a</i> promoter	none
p-attP-NTS-V5-GFP-TM-ATS- <i>hsp86</i>	express mini- <i>var</i> NTS-V5-GFP-TM-ATS by <i>ef-1a</i> promoter	none
p-attP-NTS-V5-TM-ATS-GFP	express mini- <i>var</i> NTS-V5-TM-ATS-GFP by <i>ef-1a</i> promoter	none
p-attP-NTS-V5-GFP-CBD	express mini- <i>var</i> NTS-V5-GFP by <i>ef-1a</i> promoter	<i>bsd</i>
p-attP-NTS-V5-GFP-TM-ATS-CBD	express mini- <i>var</i> NTS-V5-GFP-TM-ATS by <i>ef-1a</i> promoter	<i>bsd</i>
p-attP-NTS-V5-GFP-TM-ATS- <i>hsp86</i> -CBD	express mini- <i>var</i> NTS-V5-GFP-TM-ATS by <i>ef-1a</i> promoter	<i>bsd</i>
p-attP-NTS-V5-TM-ATS-GFP-CBD	express mini- <i>var</i> NTS-V5-TM-ATS-GFP by <i>ef-1a</i> promoter	<i>bsd</i>
p-attP- <i>hsp3</i> -NTS-V5-GFP	express mini- <i>var</i> NTS-V5-GFP by <i>hsp3</i> promoter	none
p-attP- <i>hsp3</i> -NTS-V5-GFP-TM-ATS- <i>hsp86</i> -CBD	express mini- <i>var</i> NTS-V5-GFP-TM-ATS by <i>hsp3</i> promoter	none
p-attP- <i>hsp3</i> -NTS-V5-TM-ATS-GFP	express mini- <i>var</i> NTS-V5-TM-ATS-GFP by <i>hsp3</i> promoter	none
p-attP- <i>hsp3</i> -NTS-V5-GFP-CBD	express mini- <i>var</i> NTS-V5-GFP by <i>hsp3</i> promoter	<i>bsd</i>
p-attP- <i>hsp3</i> -NTS-V5-GFP-TM-ATS- <i>hsp86</i> -CBD	express mini- <i>var</i> NTS-V5-GFP-TM-ATS by <i>hsp3</i> promoter	<i>bsd</i>
p-attP- <i>hsp3</i> -NTS-V5-TM-ATS-GFP- <i>hsp86</i> -CBD	express mini- <i>var</i> NTS-V5-TM-ATS-GFP by <i>hsp3</i> promoter	<i>bsd</i>
p-attP- <i>hsp3</i> -A4var-V5-TM-ATS-GFP	express mini- <i>var</i> A4var-V5-TM-ATS-GFP by <i>hsp3</i> promoter	none
p-attP- <i>hsp3</i> -R29var-V5-GFP-TM-ATS- <i>hsp86</i>	express mini- <i>var</i> R29var-V5-GFP-TM-ATS by <i>hsp3</i> promoter	none
p-attP- <i>hsp3</i> -R29var-V5-TM-ATS-GFP	express mini- <i>var</i> R29var-V5-TM-ATS-GFP by <i>hsp3</i> promoter	none
p-attP- <i>hsp3</i> -A4var-V5-TM-ATS-GFP-CBD	express mini- <i>var</i> A4var-V5-TM-ATS-GFP by <i>hsp3</i> promoter	<i>bsd</i>
p-attP- <i>hsp3</i> -R29var-V5-GFP-TM-ATS- <i>hsp86</i> -CBD	express mini- <i>var</i> R29var-V5-GFP-TM-ATS by <i>hsp3</i> promoter	<i>bsd</i>
p-attP- <i>hsp3</i> -R29var-V5-TM-ATS-GFP-CBD	express mini- <i>var</i> R29var-V5-TM-ATS-GFP by <i>hsp3</i> promoter	<i>bsd</i>

*dhfr*, dihydrofolate reductase; *bsd*, blasticidin S-deaminase